

Claims

- [c1] 1.A gun barrel with a breech end and an open end and a bore disposed between the breech end and the open end, comprising:
- (a)an outer support layer on an outside surface extending from the breech end to the open end;
 - (b)an inner support layer lining the bore of the gun barrel and extending from the breech end to the open end, and
 - (c)concrete disposed between the outer support layer and inner support layer, said concrete having a compressive strength of at least 10 megapascals.
- [c2] 2.The gun barrel of claim 1 wherein at least one of the outer support layer and the inner support layer is comprised of metal.
- [c3] 3.The gun barrel of claim 1 wherein at least one of the outer support layer and the inner support layer is comprised of steel.
- [c4] 4.The gun barrel of claim 2 wherein the inner support layer and the outer support layer are comprised of metal.

- [c5] 5.The gun barrel of claim 3 wherein the inner support layer and the outer support layer are comprised of steel.
- [c6] 6.The gun barrel of claim 1 wherein at least one of the outer support layer and the inner support layer is comprised of cardboard or a polymeric material.
- [c7] 7.The gun barrel of claim 2 wherein at least one of the outer support layer and the inner support layer is comprised of cardboard or a polymeric material.
- [c8] 8.The gun barrel of claim 3 wherein at least one of the outer support layer and the inner support layer is comprised of cardboard or a polymeric material.
- [c9] 9.The gun barrel of claim 1, wherein the concrete has a compressive strength that is less than the than the compressive strength of one of (a) the inner support layer and (b) the outer support layer.
- [c10] 10.The gun barrel of claim 2, wherein the concrete has a compressive strength that is less than the than the compressive strength of one of (a) the inner support layer and (b) the outer support layer.
- [c11] 11.The gun barrel of claim 3, wherein the concrete has a compressive strength that is less than the than the compressive strength of one of (a) the inner support layer

and (b) the outer support layer.

[c12] 12.The gun barrel of claim 6, wherein the concrete has a compressive strength that is greater than the compressive strength of one of (a) the inner support layer and (b) the outer support layer.

[c13] 13.The gun barrel of claim 7, wherein the concrete has a compressive strength that is greater than the compressive strength of one of (a) the inner support layer and (b) the outer support layer.

[c14] 14.The gun barrel of claim 8, wherein the concrete has a compressive strength that is greater than the compressive strength of one of (a) the inner support layer and (b) the outer support layer.

[c15] 15.The gun barrel of claim 1 additionally comprising a reinforcing element disposed in the concrete.

[c16] 16.The gun barrel of claim 2 additionally comprising a reinforcing element disposed in the concrete.

[c17] 17.The gun barrel of claim 3 additionally comprising a reinforcing element disposed in the concrete.

[c18] 18.The gun barrel of claim 1 wherein the breech end is closed.

- [c19] 19.The gun barrel of claim 1 wherein the breech end is closeable.
- [c20] 20.The gun barrel of claim 19 wherein the breech end is closeable with a breech plug.
- [c21] 21.The gun barrel of claim 1 wherein the bore is larger in diameter at the breech end than at the open end.
- [c22] 22.The gun barrel of claim 2 wherein the bore is larger in diameter at the breech end than at the open end.
- [c23] 23.The gun barrel of claim 3 wherein the bore is larger in diameter at the breech end than at the open end.
- [c24] 24.A gun barrel with a breech end and an open end and a bore disposed between the breech end and the open end, comprising:
- (a)an outer support layer comprised of steel extending from the breech end to the open end;
 - (b)an inner support layer comprised of steel lining the bore of the gun barrel and extending from the breech end to the open end;
 - (c)concrete disposed between the outer support layer and the inner support layer.
- [c25] 25.The gun barrel of claim 22 additionally comprising a reinforcing element disposed in the concrete.

- [c26] 26. A method of launching a projectile, comprising:
- (a) providing a gun barrel that is comprised of concrete disposed between an inner support layer and an outer support layer, and
 - (b) firing a projectile from the gun barrel.
- [c27] 27. The method of claim 26, wherein the projectile is selected from the group consisting of: rockets, rockets with satellite payloads, artillery, nuclear interception devices, and devices for fire-fighting applications.